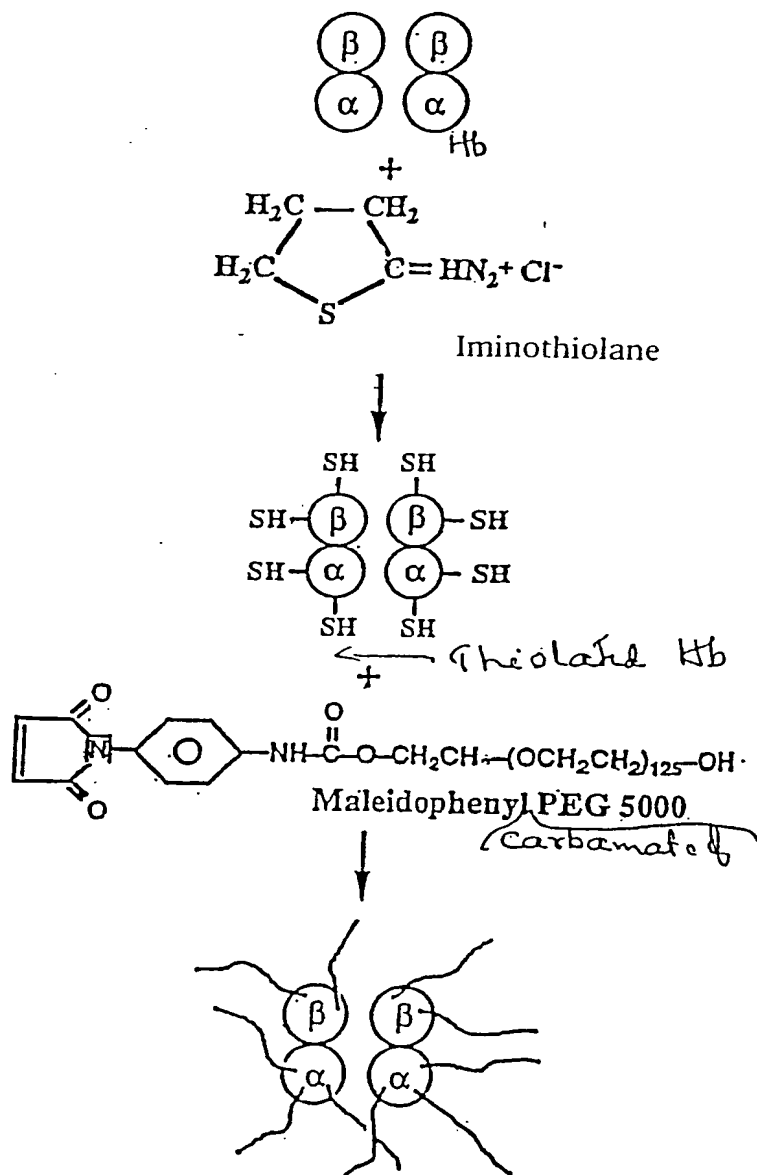


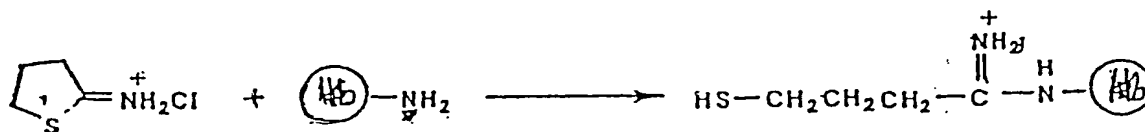
FIG. 1

A



B

Hb surface decorated with PEG



Iminothiolane

γ-Mercaptobutyrimidyl-Hb

Amidation of amino group of Hb with Iminothiolane

FIG. 2A

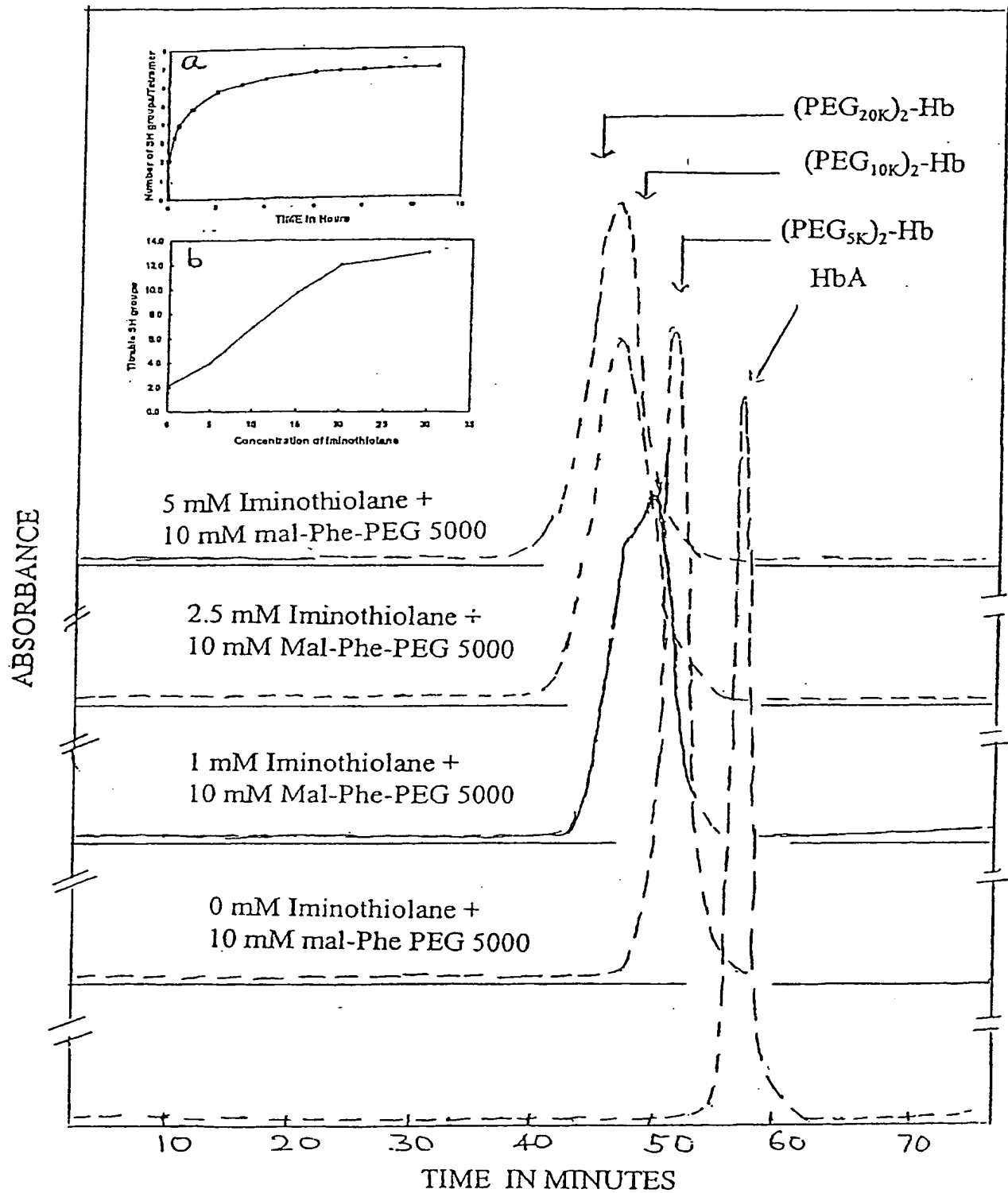


FIG. 2B

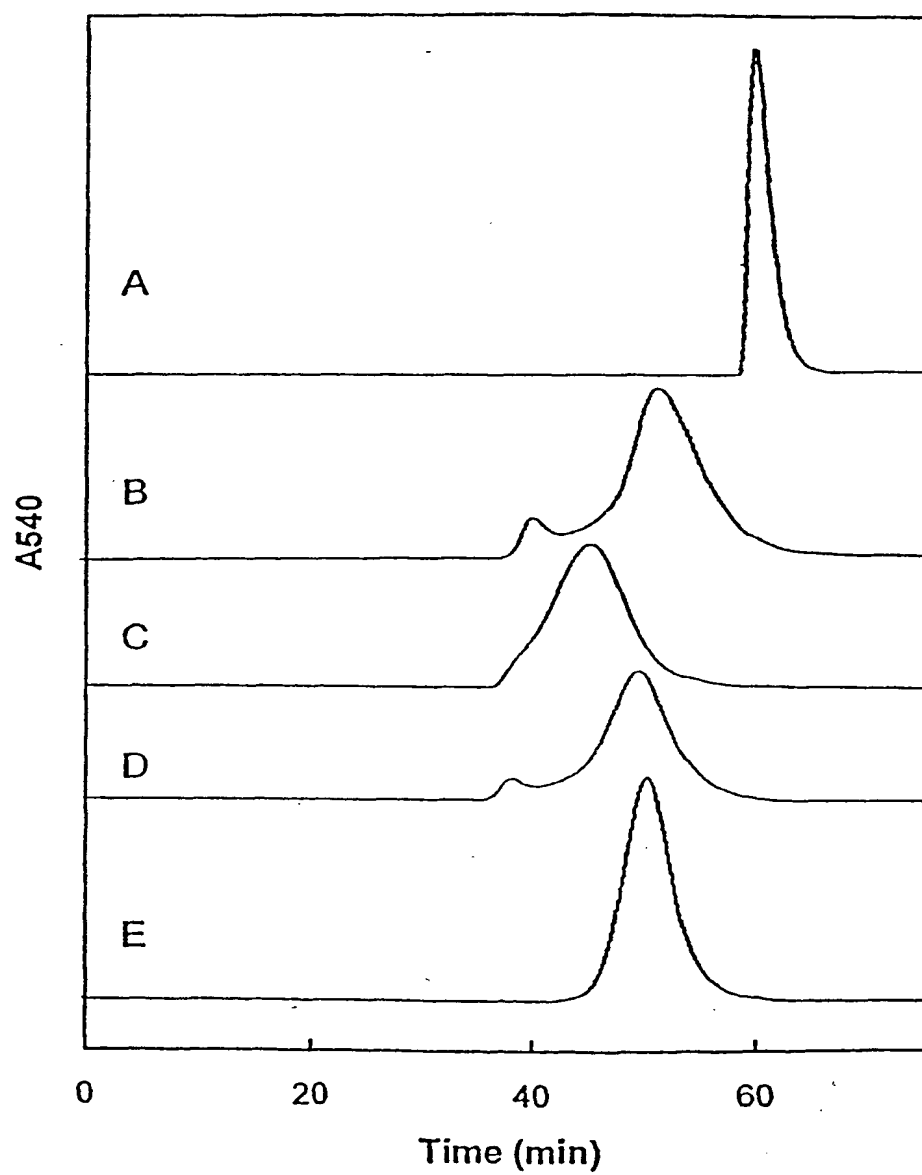


FIG. 3

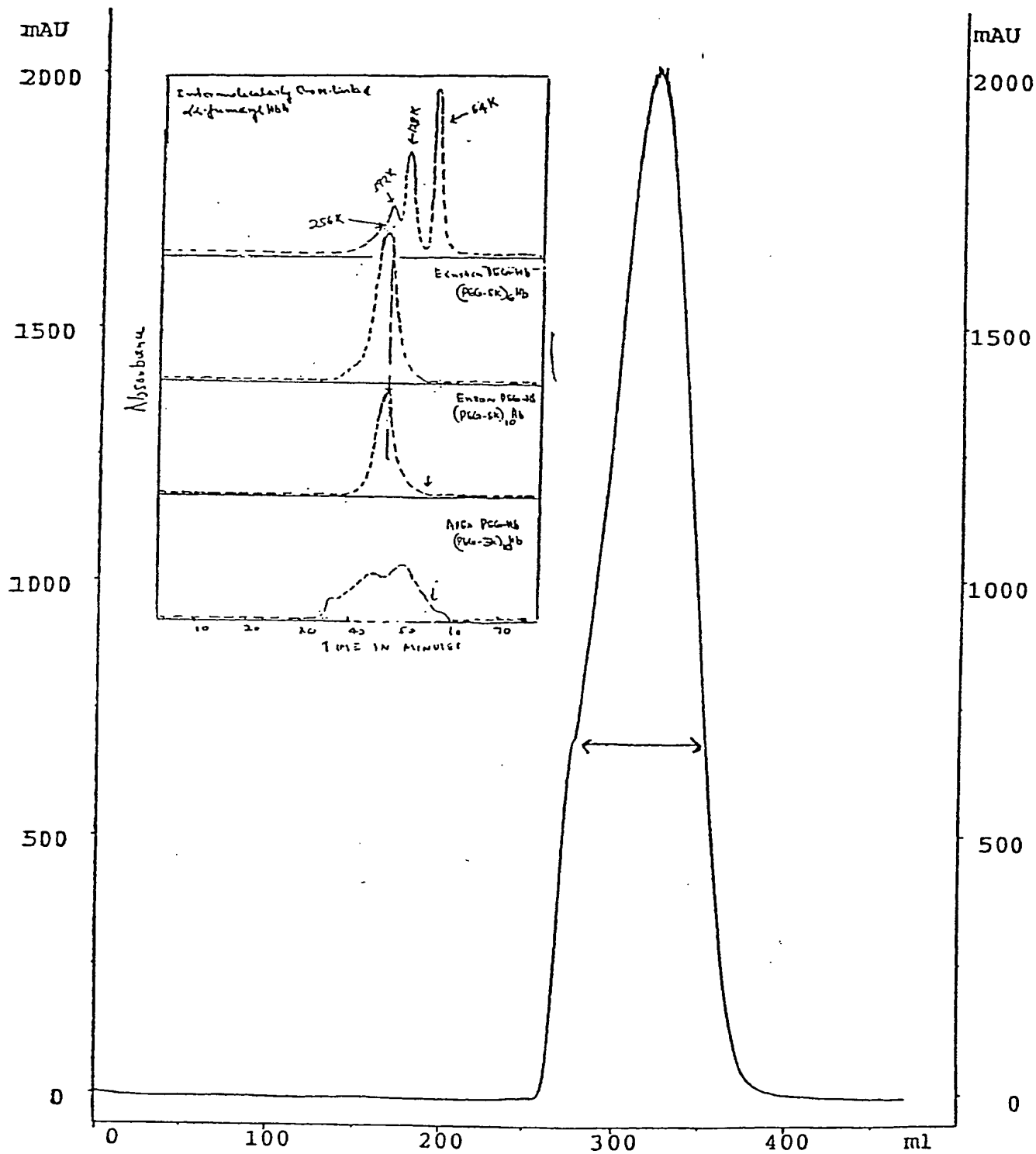
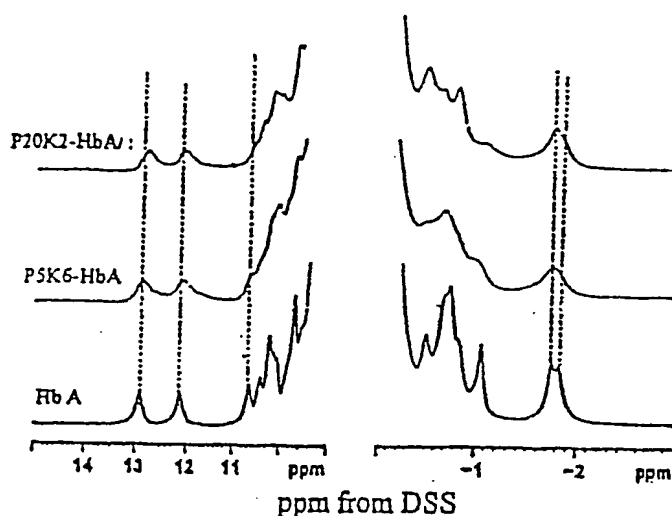


FIG. 4

300-MHz  $^1\text{H}$ -NMR spectra of 3% solutions of Hb A, P5K6-HbA, P20K2-HbA, in the CO form [(A) and (B)] and in the deoxy form [(C) and (D)] in  $\text{H}_2\text{O}$  in 0.1 M phosphate buffer in the presence of 5%  $\text{D}_2\text{O}$  at pH7.0 and 29 °C.

A. Exchangeable Proton Resonances

B. Ring-Current-Shifted Proton Resonances



C. Hyperfine-Shifted N $\delta$ H Resonances of Proximal Histidines

D. Hyperfine-Shifted and Exchangeable Proton Resonances

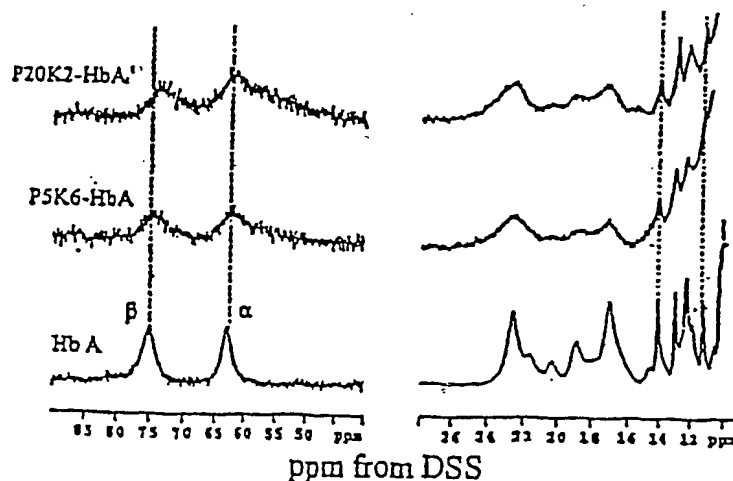


FIG. 5

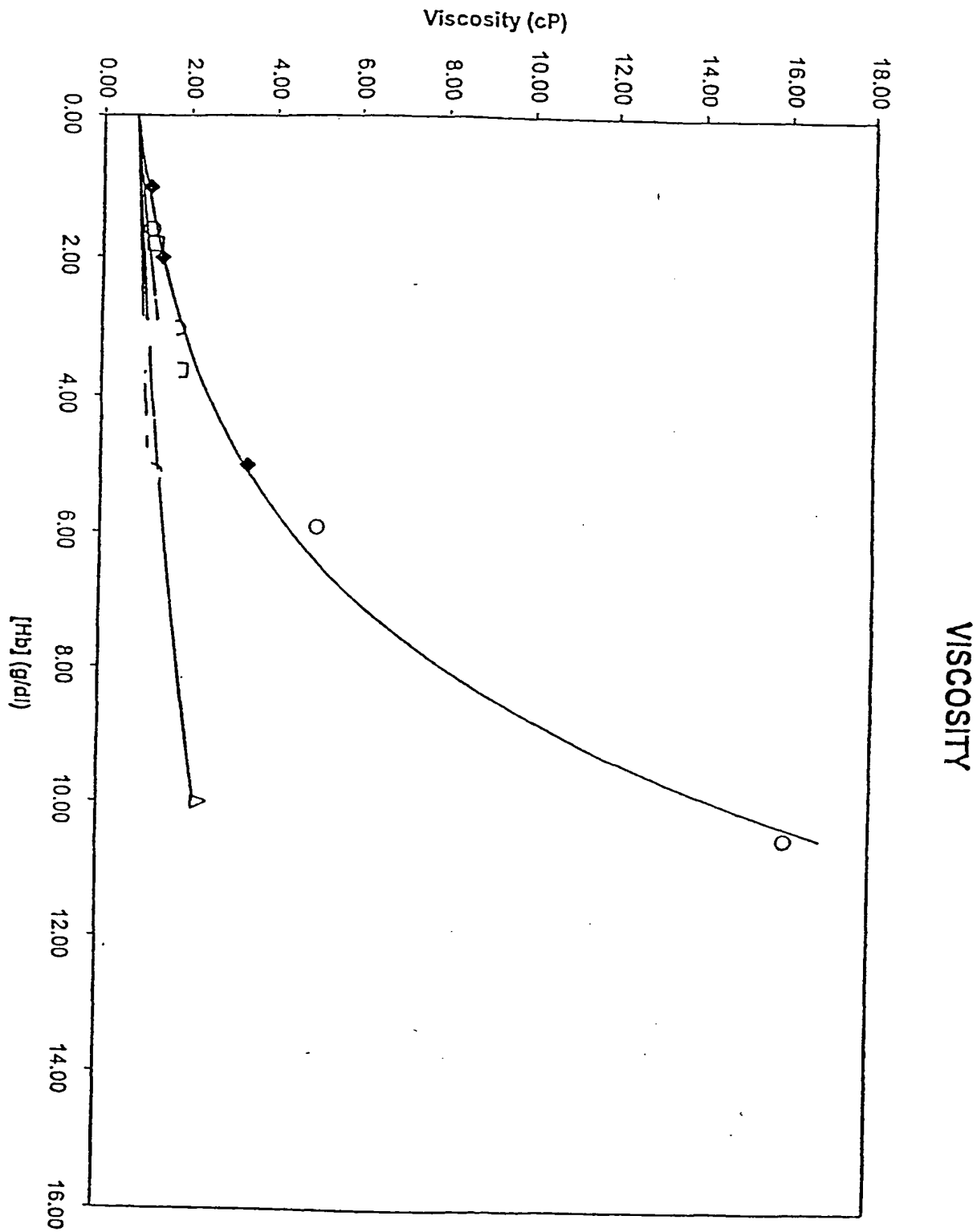


FIG. 6

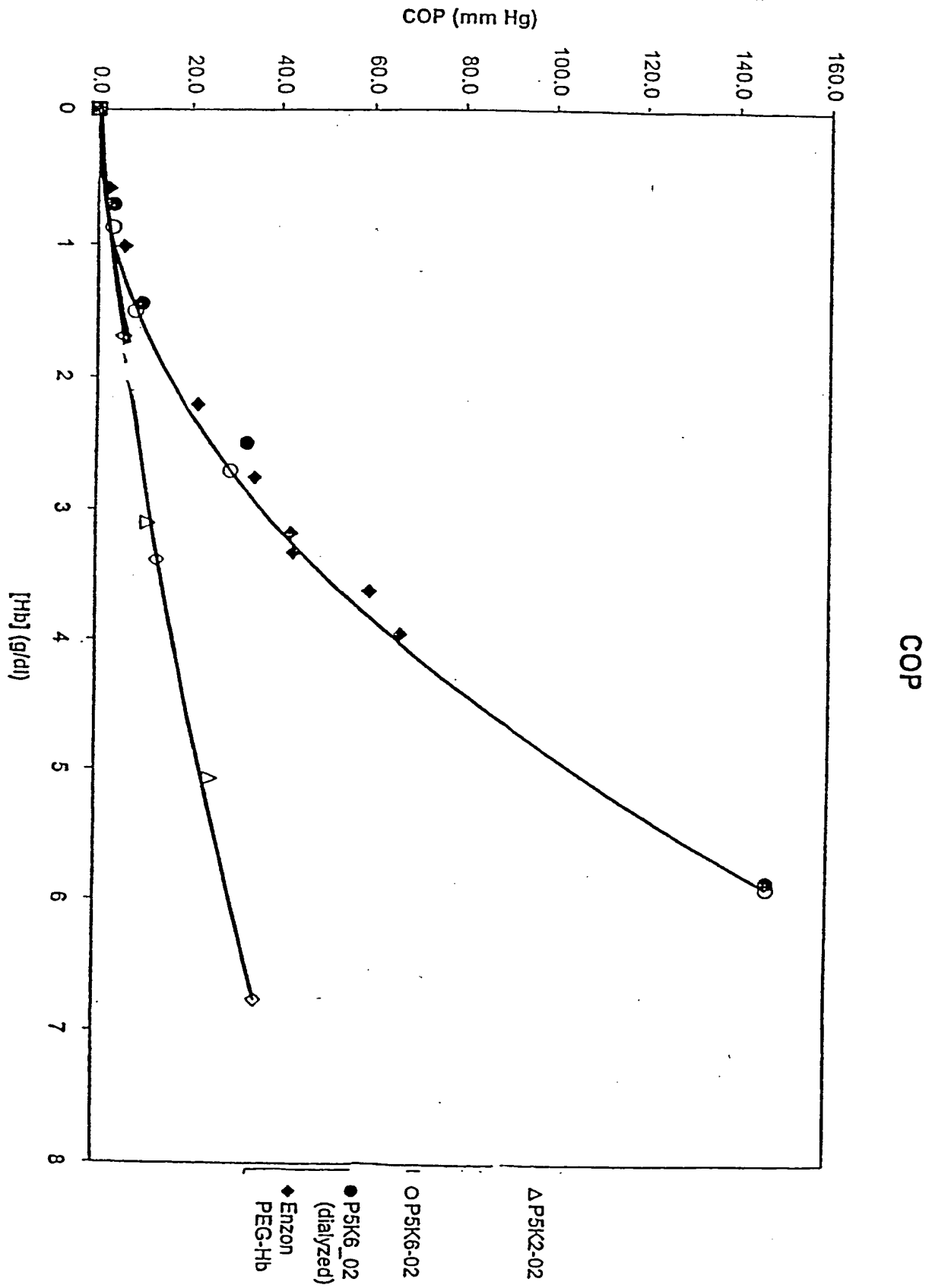


FIG. 7A

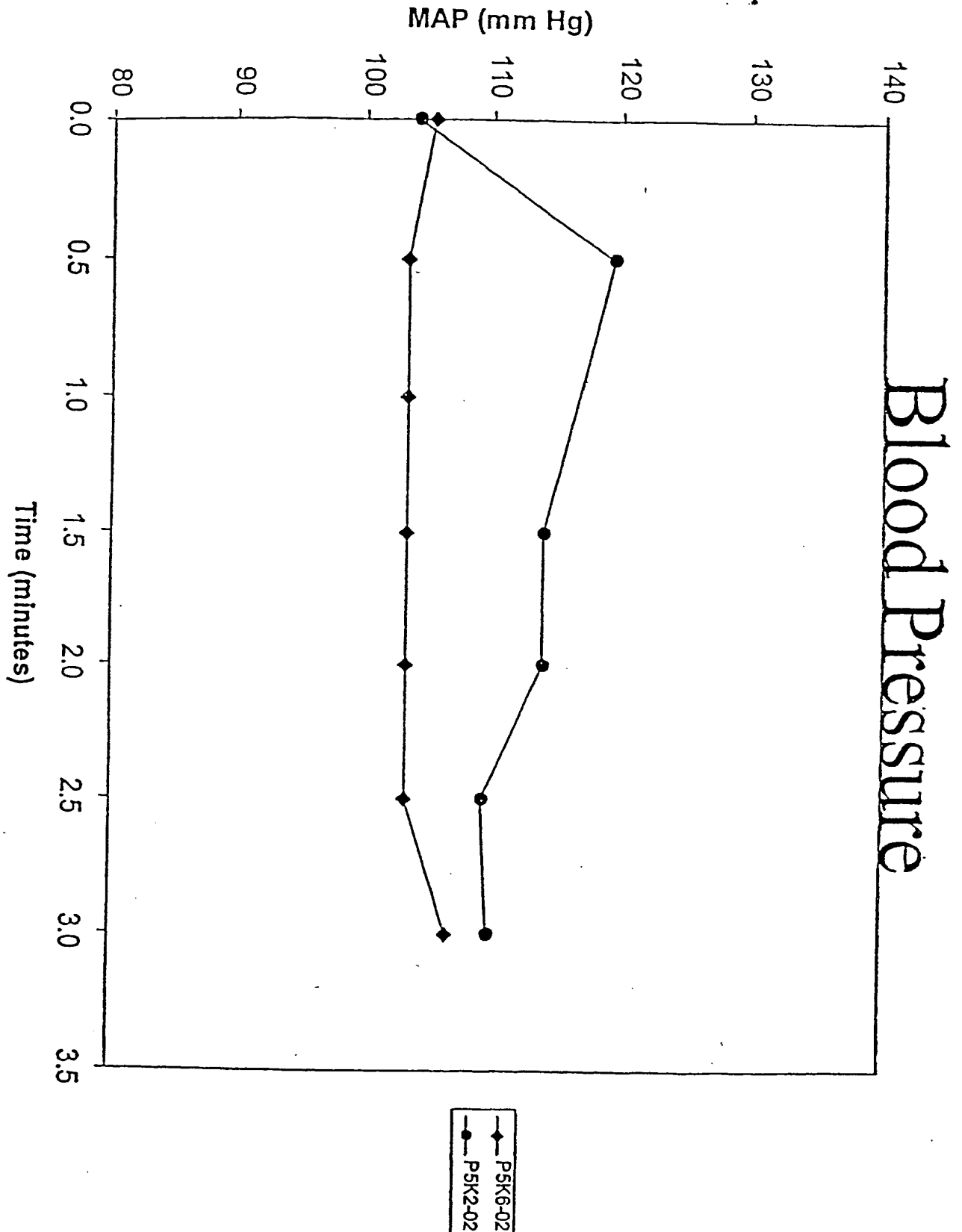




FIG. 7B

Effects of 10% top load of P5K2 (black) and P5K6 (gray) on hamster  $A_2$  arteriolar diameter over 1hr.

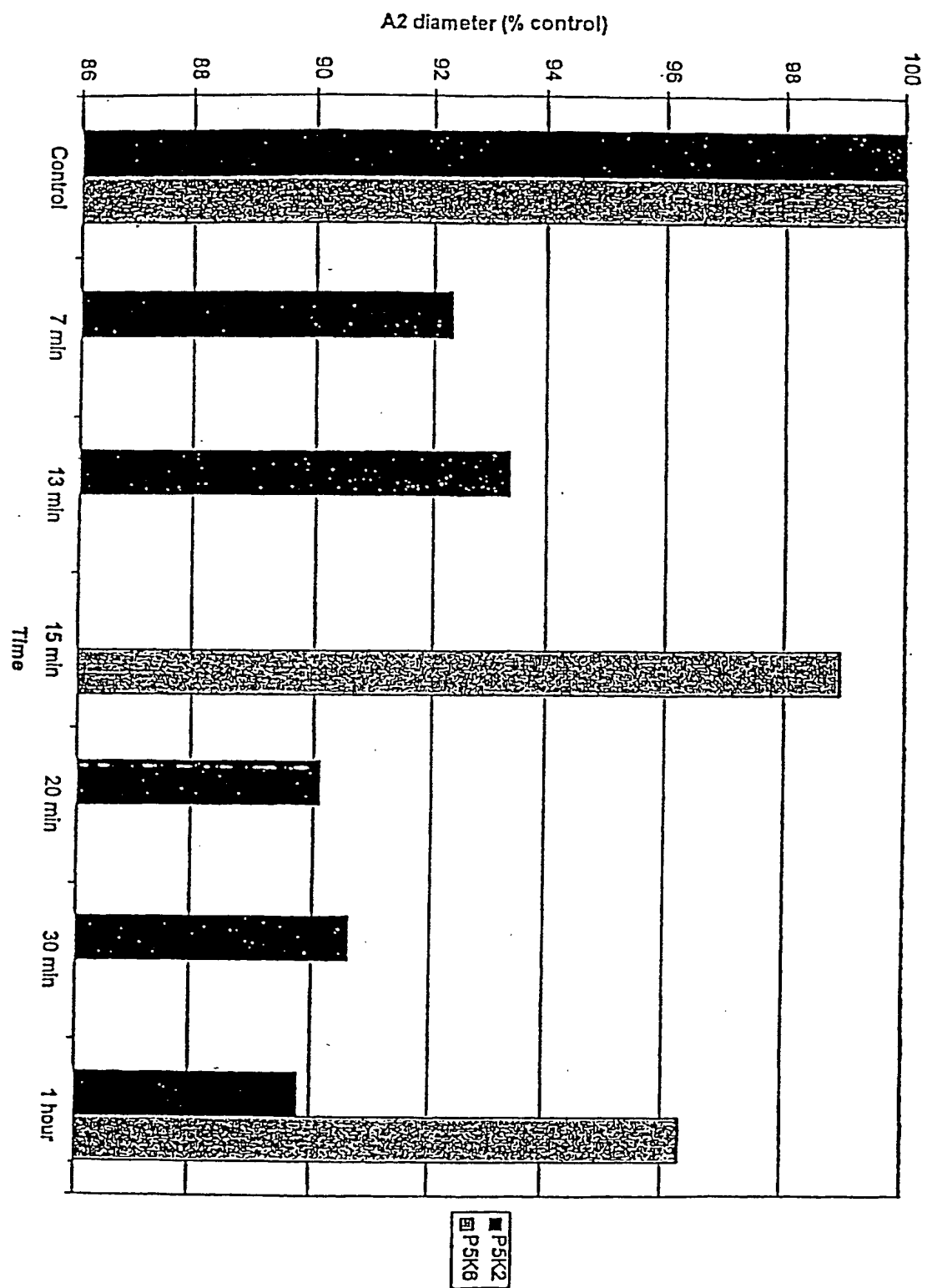


FIG. 8

